

matching and exceeding higher bids at the last round, such an early ending would effectively convert the simultaneous multiple round auction into a simultaneous sealed-bid auction. That would likely lead to both a highly inefficient assignment of licenses and an unnecessarily low level of revenue for the Treasury. For further discussion of this problem, see my affidavit of July 5 in this docket.

14. How long should the rounds be for the broadband MTA auction? Early in the auction, when the number of active bidders is largest and the tentative geographic “footprints” of the bidders are being established, bidders will have a great deal of new information to assimilate. That condition favors using longer rounds. Given the relatively low prices at the initial rounds of the auction, the decision to continue bidding will come easily to the firms with the highest values, a factor that favors shorter rounds. A 24 hour round seems a suitable compromise for the early rounds.

15. Later in the auction, it may happen that fewer than ten MTA licenses are actively contested on any one round and that successive bids on each license are near the minimum bid increment. This development would make it relatively easy for decision makers to assimilate the new information from each round of bidding and to forecast accurately the most likely scenarios for the next round. It would then be appropriate to move to shorter rounds, as was done with good effect in the narrowband auction after the pace of bidding in that auction had slowed.

16. In order to allow the bidders to plan their decision making procedures for the auction, it is important that the Commission decide explicitly about the possible lengths of bidding rounds, including especially the minimum length of each round. For example, the Commission might decide that initial rounds for the MTA auction will be conducted at the rate of one round per day and that at no stage in the auction will rounds be shorter than four hours. This aspect of the rules will affect the kind of decision support information that will be prepared for the bidders as well as the lines of authority to be consulted during the course of the auction. For reasons discussed in

the next section, the Commission should permit its administering agents to set the round length at their discretion within the pre-determined limits.

### **RESPONSE TO GTE**

17. The importance of ensuring a timely close of the auction also supplies ample reason to reject GTE's proposal that bidders retain their full bidding eligibility as long as they are active on at least one license in each round. GTE calls this the "original Milgrom-Wilson activity rule," and indeed Professor Wilson and I initially favored it for the same reason that GTE does – because it offers so much flexibility to bidders. However, further consideration of how best to ensure a timely completion of the auction and an analysis of the effect of activity restrictions led us to advocate the more stringent activity rule that the Commission has since adopted.

18. Prudence dictates that some mechanism to assure a reasonable pace for the auction must be established. The Commission's rules permit it to end the auction after a fixed number of rounds in order to abort a very slowly progressing auction. However, such an ending would be highly undesirable, as described in paragraph 13.

19. Under the Fifth Report and Order, the Milgrom-Wilson activity rule would be the principal mechanism for ensuring a reasonable pace of bidding during the broadband auction. The narrowband auction demonstrated that shortening the time allotted for rounds of bidding and perhaps also varying the minimum bid increment could be effective alternative ways to speed the progress of the auction. These alternatives by themselves, however, cannot ensure that the auction is completed in a timely manner, because many bidders may still adopt a wait-and-see attitude, doing little bidding in the early rounds. Some bidders do appear to have adopted such strategies in the narrowband auction. The main question to be addressed, therefore, is how the Milgrom-Wilson activity rule and the changing round length and bid increment might best be used together to control the pace of the auction more effectively than any one of these could do alone.

20. The phase 1 portion of the Milgrom-Wilson activity rule, which requires that bidders remain active on 1/3 of the spectrum for which they wish to remain eligible, is a reasonable and workable restriction for the first rounds of the auction, which ensures a fast start for the auction. It limits bidders' abilities to adopt wait-and-see strategies, but does not much limit the bidders' abilities to pursue back-up strategies as prices rise higher than they had hoped. One could instead use large bid increments early in the auction could help to ensure a quick start, but these are harder to use in the broadband MTA auction than in the narrowband auction: the greater heterogeneity among the licenses makes it difficult to set the appropriate bid increment on a license-by-license basis. The phase 1 activity rule and carefully selected bid increments could also be used together, but the activity rule is likely to do most of the desired work early in the auction.

21. The limitations imposed in phases 2 and 3 under the Milgrom-Wilson activity rule are more substantial than those imposed in phase 1. The phase 3 restriction, especially, could seriously limit some bidders' abilities to pursue particular back-up strategies. While there are also advantages for bidders when the auction enters phase 2 or 3 – most importantly that they gain some certainty about the number of still-active competitors<sup>2</sup> – there are circumstances, such as those described in paragraph 15, in which shortening the time allotted for each round would be preferable to advancing the auction to phase 2 or 3.

22. This review of the alternative mechanisms of controlling the pace of the auction indicates that there is too much detail and too much uncertainty about the most likely auction scenarios to allow the Commission to determine in advance of the auction how best to combine the various mechanisms. Therefore, the Commission should not attempt to determine these things in advance. Instead, it should continue the policy begun in the narrowband auction, allowing discretion to those

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<sup>2</sup>For additional detail, see my affidavit of July 5 in this docket.

administering the auction to determine the length of time allotted for each round and the minimum bid increment. In addition, it should allow the auction administrators, at their discretion, to postpone the onset of phases 2 and 3 when they would otherwise be triggered under the Milgrom-Wilson activity rule. Bidders would be notified of this postponement by an announcement before the beginning of the first affected round. The administrator's option to implement the phase 2 or 3 activity restrictions would continue to provide the best available safeguard against an excessively long auction. It is conceivable, however, that the strict limits of phase 3 of the Milgrom-Wilson rule might be avoided entirely if the administrator found them unnecessary to complete the auction in a timely manner.

23. With the modifications suggested in paragraph 22, it is possible that many more rounds would be spent in phase 1 in the broadband auctions than previously had been anticipated. Since the current bidding waiver rule ties waivers to phases — one waiver is permitted to each bidder in each phase, this change alters the premises on which the Commission's current waiver policy is based. That policy should accordingly be replaced by one in which each bidder is allowed to exercise one waiver in each twenty rounds, that is, one waiver in rounds 1-20, another in rounds 21-40, and so on. In order to prevent stockpiling and strategic use of waivers, bidders should not be permitted to carry unexercised waivers forward from one group of rounds to the next, just as they are not currently permitted to carry waivers forward from one phase to the next. Such a system of waivers would add minimally to the total length of the auction — even in the unlikely event that all the waivers were exercised. At the same time, according to this rule, waivers would be allowed sufficiently frequently to make

# CALIFORNIA ALL-PURPOSE ACKNOWLEDGMENT

No. 5907

State of California

County of San Mateo

On September 9, 1994 before me, Mary Peplinski, Notary Public

DATE

NAME, TITLE OF OFFICER - E.G., "JANE DOE, NOTARY PUBLIC"

personally appeared Paul Milgrom

NAME(S) OF SIGNER(S)

☐ personally known to me - **OR** - ☒ proved to me on the basis of satisfactory evidence to be the person~~(s)~~ whose name~~(s)~~ is/~~are~~ subscribed to the within instrument and acknowledged to me that he/~~she/they~~ executed the same in his/~~her/their~~ authorized capacity~~(ies)~~, and that by his/~~her/their~~ signature~~(s)~~ on the instrument the person~~(s)~~, or the entity upon behalf of which the person~~(s)~~ acted, executed the instrument.



WITNESS my hand and official seal.

Mary Peplinski

SIGNATURE OF NOTARY

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it unlikely that a serious bidder would be disqualified from further participation solely on account of some minor technical error.

Respectfully submitted,

*Paul R. Milgrom*  
Paul R. Milgrom

Date:

Subscribed and sworn to before me this 8<sup>th</sup> day of September, 1994.

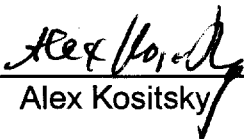
*Mary Peplinski*  
Notary Public

My Commission expires April 11, 1997.



## CERTIFICATE OF SERVICE

I, Alex Kositsky, do hereby certify that a copy of the foregoing Opposition and Comments of Pacific Bell Mobile Services was mailed this 9th day of September, 1994, via first class United States mail, postage prepaid to the parties on the attached service list.

  
\_\_\_\_\_  
Alex Kositsky

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